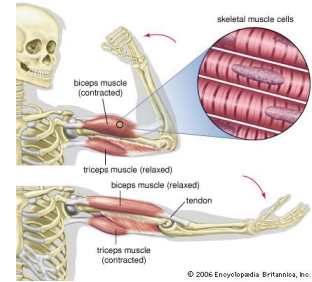


Source: <http://kids.britannica.com/elementary/art-111628/Contraction-and-relaxation-of-the-biceps-and-triceps-muscles>



Skeletal muscle contraction

- * most skeletal muscles are arranged in opposing, or antagonistic pairs

Skeletal muscle

- * skeletal muscle is arranged into fibers, which consist of many smaller units called myofibrils
- * myofibrils consist of even smaller units, myosin and actin
- * tendons connect muscles to bones

Skeletal muscle

- * Skeletal muscles are voluntary muscles that cause movement
- * tendons connect muscles to bones

Cardiac muscle

- * the involuntary muscle present only in the heart is called cardiac muscle
- * cardiac muscle cells are arranged in a network that allows the heart muscle to contract efficiently and rhythmically

Smooth muscle

- * many hollow internal organs such as the stomach, bladder, and uterus are lined with smooth muscle, a type of involuntary muscle

Skeletal muscle

Skeletal muscle contraction

Slow-twitch muscles

- * slow-twitch muscle fibers have more endurance than fast-twitch muscle fibers
- * they contain myoglobin, a respiratory molecule that stores oxygen and serves as an oxygen reserve

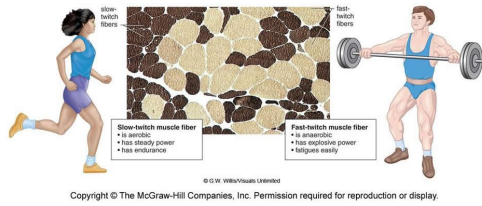
Slow-twitch muscles

Skeletal muscle strength

Fast-twitch muscles

Fast-twitch muscles

- * Fast-twitch muscle fibers fatigue easily but provide great strength for rapid, short movements
- * they rely on anaerobic metabolism, which causes a buildup of lactic acid



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Source: <http://classes.midlandstech.edu/carterp/Courses/bio110/chap07/chap07.html>

Sliding filament theory

- * once a nerve signal reaches a muscle, the actin filaments slide toward one another, causing the muscle to contract or relax

Sliding filament theory

The Muscular System

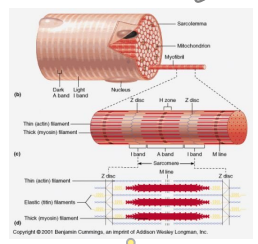
Three types of muscles

Three types of muscles

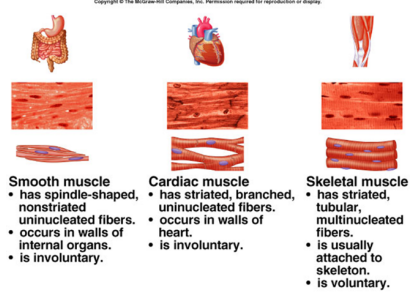
- * muscles are classified according to their structures and function

Cardiac muscle

Smooth muscle



Source: <http://soni2006.hubpages.com/hub/fast-and-slow-twitch-fibers>



Source: <https://sites.google.com/site/iilyear4/three-types-of-muscle-tissue>